

REMARKS

Claims 1-48 have been pending in this application, of which Claims 15-45 have been withdrawn. Claims 1, 6, 7, 10, 46 and 47 have been rejected. These rejections are traversed and reconsideration is requested.

Allowable Subject Matter

The Applicants note with appreciation the indication of allowability of Claims 2-5, 8-9, 11-14 and 48 if rewritten in independent form. These claims have been amended so as not to depend on the rejected base claims. New Claims 49 and 50 parallel pending Claim 2, which the Examiner has indicated as allowable.

Claim Rejections Under 35 U.S.C. 102

Claims 1, 6, 7, 10, 46 and 47 have been rejected under 35 U.S.C. 102(b) as being unpatentable in view of Melcher (Re. 36,986). This rejection is respectfully traversed and reconsideration is requested.

The present application is directed toward measuring responses of a conducting and/or magnetic test material when interrogated by a magnetic field. A primary or drive winding of the test circuits creates this magnetic field when driven by an electric current. The primary winding contains at least two different coils. The current passes through both coils at the same time and the relative direction of the current flow between the coils can be switched. The switching allows for the spatial distribution of the interrogating magnetic field to be changed, which affects the penetration depth for the magnetic field into the test material. The spatial distribution approximates one or more spatial periods of the field and is characterized by the dominant spatial period or wavelength. The switch allows the spatial period to be changed even with the current flowing through the same coils. The shape of the field may approximate a sinusoidal distribution or another shape with a dominant spatial wavelength.

Melcher also deals with characterizing conducting and/or magnetic test materials with a magnetic field. The magnetic field distribution is changed by passing a current through different winding constructs that have different dominant spatial periods or wavelengths. This allows the response of the test material to be determined for multiple wavenumbers or multiple dominant

spatial wavelengths. However, in Melcher the current is switched between the different winding constructs so that the current only passes through one construct at a time.

Melcher does not teach or suggest passing the current simultaneously through multiple drive coils or switching the relative current directions in the coils. Furthermore, Claim 7 of Melcher, which the Examiner references as teaching switching the current directions, specifically recites "applying *one* current to the appropriate driver coil array," which is different from switching relative directions in two or more coils as is claimed, for example, in amended independent Claims 1 and 46. Therefore, Claims 1 and 46 are not anticipated by Melcher and the rejection should be withdrawn. Dependent Claims 6, 7, 10 and 47 depend on independent Claim 1 and are not anticipated by Melcher for at least the same reasons as above. All claims are now believed to be in condition for allowance.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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